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Application Serial No.: 10/796,327
Amendment and Response to May 3, 2007 Non-Final Office Action

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method comprising:

acquiring a first plurality of images of a first portion of a body undergoing substantially periodic motion;

acquiring a second plurality of images of a second portion of the body, the second portion comprising a portion of the first portion;

determining a correlation between at least one of the first plurality of images and at least one of the second plurality of images; and

generating a combined image of the first portion and the second portion based on the at least one of the first plurality of images and the at least one of the second plurality of images, the combined image corresponding to a first phase of the periodic motion;

acquiring a third plurality of images of a third portion of the body, the third portion comprising a next portion of the second portion;

determining a correlation between the at least one of the second plurality of images and at least one of the third plurality of images; and

generating a combined image of the second portion and the third portion based on the at least one of the second plurality of images and the at least one of the third plurality of images, the combined image of the second portion and the third portion corresponding to the first phase of the periodic motion.

2. (original) A method according to Claim 1, wherein the first plurality of images and the second plurality of images comprise three-dimensional cross-sectional images of the body.

3. (original) A method according to Claim 2, wherein the first plurality of images and the second plurality of images are acquired by a computed tomography scanner.

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4. (original) A method according to Claim 2, wherein the first plurality of images and the second plurality of images are acquired using a linear accelerator.

5. (original) A method according to Claim 1, wherein determining the correlation comprises:

determining that the at least one of the first plurality of images and the at least one of the second plurality of images represent substantially a same phase of the periodic motion.

6. (original) A method according to Claim 5, wherein determining the correlation further comprises:

determining that the portion is substantially identically represented in the at least one of the first plurality of images and the at least one of the second plurality of images.

7. (original) A method according to Claim 1, further comprising:

determining a second correlation between a second at least one of the first plurality of images and a second at least one of the second plurality of images; and

generating a second combined image of the first portion and the second portion based on the second at least one of the first plurality of images and the second at least one of the second plurality of images, the second combined image corresponding to a second phase of the periodic motion.

8. (original) A method according to Claim 7, further comprising:

generating an animation based on the combined image and on the second combined image, the animation representing the first portion and the second portion undergoing the periodic motion.

9. (original) A method according to Claim 7, wherein determining the second correlation comprises:

determining that the portion is substantially identically represented in the second at least one of the first plurality of images and the second at least one of the second plurality of images.

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10. cancelled

11. (currently amended) A method according to Claim ~~10~~ 1, further comprising:
generating a next combined image based on the combined image of the second portion and the third portion and on the combined image of the first portion and the second portion, the next combined image corresponding to the first phase of the periodic motion.

12. (currently amended) A method according to Claim ~~10~~ 1, wherein determining the correlation between the at least one of the second plurality of images and the at least one of the third plurality of images comprises:

determining that the next portion is substantially identically represented in the at least one of the second plurality of images and the at least one of the third plurality of images.

13. (currently amended) A method according to Claim 1, further comprising:
~~acquiring a third plurality of images of a third portion of the body, the third portion comprising a next portion of the second portion;~~
determining a correlation between a second at least one of the second plurality of images and at least one of the third plurality of images; and
generating a combined image of the second portion and the third portion based on the second at least one of the second plurality of images and the at least one of the third plurality of images, the combined image of the second portion and the third portion corresponding to a second phase of the periodic motion.

14. (original) A method according to Claim 13, wherein determining the correlation between the second at least one of the second plurality of images and the at least one of the third plurality of images comprises:

determining that the next portion is substantially identically represented in the at least one of the second plurality of images and the at least one of the third plurality of images.

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15. (currently amended) An apparatus comprising:
a memory storing processor-executable process steps; and
a processor in communication with the memory and operative in conjunction with the stored process steps to:

acquire a first plurality of images of a first portion of a body undergoing substantially periodic motion;

acquire a second plurality of images of a second portion of the body, the second portion comprising a portion of the first portion;

determine a correlation between at least one of the first plurality of images and at least one of the second plurality of images; and

generate a combined image of the first portion and the second portion based on the at least one of the first plurality of images and the at least one of the second plurality of images, the combined image corresponding to a first phase of the periodic motion;

acquire a third plurality of images of a third portion of the body, the third portion comprising a next portion of the second portion;

determine a correlation between the at least one of the second plurality of images and at least one of the third plurality of images; and

generate a combined image of the second portion and the third portion based on the at least one of the second plurality of images and the at least one of the third plurality of images, the combined image of the second portion and the third portion corresponding to the first phase of the periodic motion.

16. (original) An apparatus according to Claim 15, wherein the first plurality of images and the second plurality of images comprise three-dimensional cross-sectional images of the body.

17. (original) An apparatus according to Claim 16, wherein the first plurality of images and the second plurality of images are acquired by a computed tomography scanner.

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18. (original) An apparatus according to Claim 16, wherein the first plurality of images and the second plurality of images are acquired using a linear accelerator.

19. (original) An apparatus according to Claim 15, wherein determination of the correlation comprises:

determination that the at least one of the first plurality of images and the at least one of the second plurality of images represent substantially a same phase of the periodic motion.

20. (original) An apparatus according to Claim 19, wherein determination of the correlation comprises:

determination that the portion is substantially identically represented in the at least one of the first plurality of images and the at least one of the second plurality of images.

21. (original) An apparatus according to Claim 15, the processor further operative in conjunction with the stored process steps to:

determine a correlation between a second at least one of the first plurality of images and a second at least one of the second plurality of images; and

generate a second combined image of the first portion and the second portion based on the second at least one of the first plurality of images and the second at least one of the second plurality of images, the second combined image corresponding to a second phase of the periodic motion.

22. (original) An apparatus according to Claim 21, the processor further operative in conjunction with the stored process steps to:

generate an animation based on the combined image and on the second combined image, the animation representing the first portion and the second portion undergoing the periodic motion.

23. (original) An apparatus according to Claim 21, wherein determination of the second correlation comprises:

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determination that the portion is substantially identically represented in the second at least one of the first plurality of images and the second at least one of the second plurality of images.

24. cancelled

25. (currently amended) An apparatus according to Claim-24_15, the processor further operative in conjunction with the stored process steps to:
generate a next combined image based on the combined image of the second portion and the third portion and on the combined image of the first portion and the second portion, the next combined image corresponding to the first phase of the periodic motion.

26. (currently amended) An apparatus according to Claim-24_15, wherein determination of the correlation between the at least one of the second plurality of images and at least one of the third plurality of images comprises:

determination that the next portion is substantially identically represented in the at least one of the second plurality of images and the at least one of the third plurality of images.

27. (currently amended) An apparatus according to Claim 15, the processor further operative in conjunction with the stored process steps to:

~~acquire a third plurality of images of a third portion of the body, the third portion comprising a next portion of the second portion;~~

determine a correlation between a second at least one of the second plurality of images and at least one of the third plurality of images; and

generate a combined image of the second portion and the third portion based on the second at least one of the second plurality of images and the at least one of the third plurality of images, the combined image of the second portion and the third portion corresponding to a second phase of the periodic motion.

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28. (original) An apparatus according to Claim 27, wherein determination of the correlation between the second at least one of the second plurality of images and the at least one of the third plurality of images comprises:

determination that the next portion is substantially identically represented in the at least one of the second plurality of images and the at least one of the third plurality of images.